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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,361	11/13/2003	Michael A. Yandrasits	59387US002	1441

32692 7590 08/15/2005

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EXAMINER
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MCCLENDON, SANZA L

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 08/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/712,361

Applicant(s)

YANDRASITS ET AL.

Examiner

Sanza L. McClendon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3-5/2005
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Amendment*

1. In response to the Amendment received on May 26, 2005, the examiner has carefully considered the amendments.

### *Terminal Disclaimer*

2. The terminal disclaimer filed on May 26, 2005 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of Application number 10/712,590 has been reviewed and is accepted. The terminal disclaimer has been recorded.

### *Response to Arguments*

3. Applicant's arguments filed May 26, 2005 have been fully considered but they are not persuasive. Applicant appears to be relying on the limitation in the instant method claim step (b) stating "exposing said fluoropolymer to electron beam radiation so as to result in the formation of crosslinks", however it is deemed that this limitation is taught in JP 54-052690, per recently obtained translated document. Per page 11, it is taught "...polymerization means of polymerization initiation sources equivalent to ultraviolet rays or ionizing radiation." Electron beam radiation is a well-known and accepted form of ionizing radiation. Therefore the examiner deems that it would have been obvious for one of ordinary skill in the art at the time of the invention to use electron beam irradiation, as suggested by Asawa et al, to crosslink the fluoropolymer of the instant invention. The motivation would have been an reasonable expectation of quickly obtaining a fully crosslinked fluoropolymer membrane matrix without residual photoinitiator remaining in the membrane matrix, since photoinitiators are not required in radical initiation using electron beam radiation in the absence of evidence to the contrary and/or unexpected results. Therefore, claims 1-10, 13-15, 18-20, 23-25, 28-39, 42-49, 52-54, and 57-58 are still rejected under 35 USC 103(a) as being unpatentable

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over Asawa et al (JP 54/052690). Additionally, there will be newly applied 35 USC 102(b) rejections for claims 19-20, 23-25, 28-39, 42-49, 52-54, and 57-58 because the crosslinked polymers of these claims appear to be the same crosslinked polymer obtained in the reference. Rejections under 35 U.S.C. 103 is indicated where prior art discloses product that appears to be either identical with or only slightly different from product claimed in product-by-process claim; Patent Office can require applicant to prove that prior art products do not necessarily or inherently possess characteristics of his claimed product; whether rejection is based on "inherency" under 35 U.S.C. 102, on "prima facie obviousness" under 35 U.S.C. 103, jointly or alternatively, burden of proof is same; Patent Office that has reason to believe that functional limitation asserted to be critical for establishing novelty in claimed subject matter may, in fact, be inherent characteristic of prior art, possesses authority to require applicant to prove that subject matter shown to be in prior art does not possess characteristic relied on.

4. Additionally, the examiner deems that a new rejection is warranted over 2005/0107490 A1, Published patent application 10/712,590, since it is deemed to additionally qualify as prior art under another subsection of 35 U.S.C. 102, and therefore, is not disqualified as prior art under 35 U.S.C. 103(c).

Applicant may overcome the applied art either by a showing under 37 CFR 1.132 that the invention disclosed therein was derived from the invention of this application, and is therefore, not the invention "by another," or by antedating the applied art under 37 CFR 1.131.

***Claim Rejections - 35 USC § 103***

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1-2, 5-7, 9-10, 12-13, 15-16, 21-22, 24-26, 28-29, and 31-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asawa et al (JP 54-052690—abstract).

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Asawa et al teaches improved fluorine-containing cation exchange membranes. Said membranes are obtained by casting and then crosslinking a fluoro-polymer using radiation. Said polymer is prepared by copolymerization of an iodine-containing vinyl-ether, a fluorinated olefin, and a fluorine-containing monomer having an ion exchange group or functional group convertible to an ion exchange group. Per the abstract general formulas for the iodine containing vinyl ether, fluorinated olefin, and the fluorine-containing monomer can be found, wherein the polymer obtained from copolymerization appear to read on the fluorinated fluoropolymer as described in instant claim 1. Asawa et al does not expressly teach using electron beam irradiation for crosslinking the polymer. However, the examiner deems that it would have been obvious for an ordinarily skilled artisan at the time of the invention to crosslink using electron beam irradiation. The motivation would have been a reasonable expectation of obtaining a crosslinked membrane without residual photoinitiator, which are known additives in radiation curing, in the final product in the absence of evidence to the contrary and/or unexpected results.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection

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of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 20-22, 24-26, 28-29, and 31-38 are rejected under 35 U.S.C. 102(b) as being anticipated by Asawa et al (JP 54-052690).

Asawa et al teaches improved fluorine-containing cation exchange membranes. Said membranes are obtained by casting and then crosslinking a fluoro-polymer using ionizing radiation—see page 11, wherein electron beam radiation is a well-known and accepted form of ionizing radiation. Said polymer is prepared by copolymerization of an iodine-containing vinyl-ether, a fluorinated olefin, and a fluorine-containing monomer having an ion exchange group or functional group convertible to an ion exchange group. Said membrane is formed by cast said monomer solution and crosslinking using radiation. Said crosslinked polymer and polymer electrolyte membranes appear to anticipate the instantly claimed polymer membranes. Since there is no functional limitation asserted to be critical for establishing novelty in the claimed subject matter, the examiner deems these appear to be the same polymer electrolyte membrane, since it has been recognized by the courts that where the prior art discloses product that appears to be either identical with or only slightly different from product claimed in product-by-process claim; Patent Office can require applicant to prove that prior art products do not necessarily or inherently possess characteristics of his claimed product.

9. Claims 1-38 are rejected under 35 U.S.C. 102(e) as being anticipated by Yandrasits et al (2005/0107490).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

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Yandrasits et al teaches polymer electrolytes crosslinked by e-beam. Said polymer has a backbone derived from tetrafluoro-ethylene monomer having a first pendent group, as found in the abstract, and second pendent group, such as Br, I, or Cl. It is deemed that claims 1-19 are taught within the general teaching of the reference. Said membrane is formed by casting and then crosslinking by electron beam radiation to form a membrane. Said membrane can have thickness from 90 microns or less, preferably from 60 microns or less, most preferably from 30 microns or less—see abstract. It is additionally taught that said polymer might be imbibed into a porous supporting matrix, wherein said useable matrices can be found in paragraph [0043] or a crosslinking agent can be added to said polymer prior to crosslinking—[0042]. The crosslinked polymer membrane appears to anticipate the membranes of claims 19-38 because the halogen groups will be liberated upon crosslinking. Since there is no functional limitation asserted to be critical for establishing novelty in the claimed subject matter, the examiner deems these appear to be the same polymer electrolyte membrane, since it has been recognized by the courts that where the prior art discloses product that appears to be either identical with or only slightly different from product claimed in product-by-process claim; Patent Office can require applicant to prove that prior art products do not necessarily or inherently possess characteristics of his claimed product. While Yandrasits et al teaches using electron beam for crosslinking, it is known in the art to crosslink similar polymers using ultraviolet radiation.

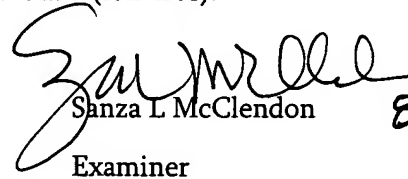
### *Conclusion*

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sanza L. McClendon whose telephone number is (571) 272-1074. The examiner can normally be reached on Monday through Friday 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Sanza L. McClendon  
Examiner

8/3/05

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